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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/954,799	09/18/2001	Todd A. Hinck	SMQ-068/P5659	8191
46141	7590	04/14/2006	EXAMINER	
LAHIVE & COCKFIELD, LLP			FILE, ERIN M	
28 STATE STREET			ART UNIT	
BOSTON, MA 02109			PAPER NUMBER	
			2611	

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SV

Office Action Summary	Application No. 09/954,799	Applicant(s) HINCK ET AL.	
	Examiner Erin M. File	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,8-12 and 21-24 is/are rejected.
- 7) ☒ Claim(s) 2,4-7 and 13-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 10, 12, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vandergraaf (U.S. Patent No. 4,347,484).

Claims 1, 12, Vandergraaf discloses a phase locked loop capable for use in a receiver circuit for receiving a data signal (col. 1, lines 11-14) with a feedback circuit for providing said receiver circuit with a plurality of feedback signals based on an output of said receiver circuit to synchronize receipt of signal (col. 2, lines 2-9). Although Vandegraaf fails to disclose a source synchronous signal, however, source synchronous signals, or signals which contain source

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synchronizing information are well known in the art because of the advantage in synchronizing data and would therefore have been obvious to one skilled in the art at the time of invention to use a source synchronous signal the invention as disclosed by Vandergraaf.

Claim 3, Vandergraaf further discloses a filter to remove a voltage component of one of said receiver output signals to assert a filtered signal (col. 1, lines 40-44), a voltage controlled oscillator for generating a plurality time varying signals (col. 2, lines 2-9), and a phase interpolator to select one or more of a said plurality of time varying signals from said voltage controlled oscillator based on said filtered signal to provide said receiver with said plurality of feedback signals (col. 1, lines 32-44).

Claim 10, 21, 22, although Vandergraaf fails to disclose a differential signal, differential signaling is well known in the art because of its advantages in noise reduction and interference and would therefore have been obvious to one skilled in the art at the time of invention to use a differential signal in the invention as disclosed by Vandergraaf.

4. Claims 8, 11, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vandegraaf as applied to claims 1 and 12 above, and further in view of Hartke et al. (U.S. Patent No. 5,969,579).

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Claim 8, 23, although Vandegraaf fails to disclose multilevel signals, Hartke discloses multilevel pulse amplitude modulated signals (abstract). Multilevel signals are often used in the art because they allow for greater amounts of data to be transferred over a fixed amount of bandwidth. Because of the advantage in the use of multilevel signals it would be obvious to one skilled in the art at the time of invention to incorporate Hartke into Vandegraaf.

Claims 11, 24, Hartke further discloses multi-level pulse amplitude modulation signals (abstract). Although Hartke does not specifically disclose two and four level PAM, two and four level PAM are the obvious number of levels of full multilevel signals. Hartke further discloses PAM signals are used to transmit information and control logic systems throughout the world (col. 1, lines 12-18). Because of the advantage of multilevel PAM signals it would be obvious to incorporate the multilevel PAM signals as disclosed by Hartke into the invention of Vandegraaf.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vandegraaf as applied to claim 1 above, and further in view of Seno et al. (U.S. Pub. No. 2002/0190283).

Claim 9, Vandegraaf fails to disclose the voltage component is an alternating current voltage, however, Seno discloses a loop filter for removing an AC component ([0163]). Seno further discloses that the removal of the AC voltage

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by the loop filter creates a control signal with a voltage level used for controlling the voltage controlled oscillator. Because of its advantage in control signaling it would have been obvious to one skilled in the art at the time of invention to include the AC voltage removing filter as disclosed by Seno into the invention as disclosed by Vandergraaf.

Allowable Subject Matter

6. Claims 2, 4-7, 13, 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about

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the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin M. File

EF

4/13/2006


JEAN B. CORRIELLUS
PRIMARY EXAMINER

4-13-06